INVESTIGATING FACTORS AFFECTING STUDENTS INTEREST IN STUDYING CHEMISTRY IN SENIOR SECONDARY SCHOOL IN EGOR LOCAL GOVERNMENT AREA IN EDO STATE

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A PROJECT SUBMITTED TO THE DEPARTMENT OF CURRICULUM AND INSTRUCTIONAL TECHNOLOGY IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF THE BACHELOR OF EDUCATION B.SC. (ED.) HONOURS DEGREE IN CHEMISTRY EDUCATION, UNIVERSITY OF BENIN, BENIN CITY.

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CERTIFICATION

We, the undersigned, certify that this research project was carried out by RUTH EBIMIEBHOR OMENAI in the Department of Curriculum and Instructional Technology (CIT) Faculty of Education, University of Benin, Benin City.

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DEDICATION

This work is dedicated to God Almighty for his unending love, guidance and protection, who made this work a success form the beginning even to its completion and also to my late mom Mrs. Josephine Omenai for always believing in me.

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TABLE OF CONTENTS

ABSTRACT

This study investigates the multifaceted factors that influence students' interest in studying chemistry in Egor Local Government Area in Edo State. Five research questions were raised in the study. And five hypotheses was formulated and tested at 0.05 level of significance.

The descriptive survey design was adopted in this study. The population of this study includes all private and public senior secondary school offering chemistry in Egor Local Government Area of Edo State. A sample size of hundred (100) students was randomly selected for this study across SS1 – SS3. The instruments were validated and to determine the instruments' reliability, twenty (20) students with similar academic standing to the sample were used in the pilot testing and a reliability score of 0.808 was obtained. Data was collected through questionnaire that were randomly distributed to ten (10) schools in the Local Government Area. The method of analysis was by mean score rating which analyzed data based on the 2.5 acceptance region format.

Based on the research, it was discovered that students are more interest in studying chemistry when the teachers utilize effective teaching methods and aids, parents who serve as role models greatly influence students' interest in studying chemistry and students study chemistry as a requirement for the science course they wish to study. The study recommends that Governments and school managements should provide an environment suitable for the best teaching methodologies and allocate appropriate teaching aids, Government agencies should make provisions for free laboratory coats across senior secondary schools to increase students' interest in studying chemistry and School administrators should make it imperative to always hire professional teachers who can effectively increase the interest of studying chemistry through adequate teaching methods and maximizing the utility of instructional material

CHAPTER ONE

INTRODUCTION

Background of the Study

In a normal education setting, teachers are very concern about their students grade most teacher's put a hope that their students will achieve good grades in examination. There are many factors that contributed to students' success. One of the factors is students' interest in learning. Understanding student interest in essential to supporting students' achievement and interest toward a particular subject. Akey (2006) agreed that the attitude of secondary school students can contribute to their academic achievement. It has been observed that a lot of students nowadays are losing interest in the science subjects such as chemistry. This is alarming because the future generation needs future communities who are good in science such as chemistry.

Chemistry is an important branch of science taught in the Senior Secondary Schools; it enables students to understand what happens in the world they live in and how it contributes to the quality of life on our planet (Ware, 2001). Interest towards chemistry is essential; it denotes attitude or feelings towards studying chemistry. Interest and academic achievement are important outcomes of science education in secondary schools. Students' interest and attitude could play substantial role in students decision to study science (Abulude, 2009). Questions about attitude have been investigated by many educational researchers; Shwartz (2006) mentioned that attitude to learn chemistry benefits all young students by fostering their chemical perceptive, which is the capability to recognize chemical concepts, define some key-concepts, identify important scientific questions, use their understanding of chemical concepts to explain phenomena, use their knowledge in chemistry to read a short article, or analyze information provided in commercial ads or internet resources. Oskamp and Schultz (2005) defined attitude as a predisposition to respond in a favorable or unfavorable manner with respect to a given attitude object. Yara's (2009) definition of attitude in science (chemistry) however,

focuses on scientific approach assumed by an individual for solving problems, assessing ideas and making decisions.

This research seeks to delve into the various factors affecting students' interest in studying Chemistry in Egor local government of Edo state. By comprehensively investigating these factors, we aim to shed light on the root causes of the declining interest and uncover potential avenues for improvement. Through this study, we hope to provide valuable insights to educational policymakers, school administrators, and educators, enabling them to develop targeted interventions and innovative approaches to reignite students' enthusiasm for Chemistry. As we embark on this research journey, it is important to acknowledge that the study has its limitations. Factors such as time constraints, the scope of the research, and the willingness of participants to share their perspectives may affect the depth of our findings. Nevertheless, we will diligently collect and analyze the available data to draw meaningful conclusions that can contribute to the ongoing discourse on educational enhancement in Edo State.

Statement Of The Problem

In recent years, there has been a noticeable decline in students' interest in studying Chemistry among secondary school students in Edo State Metropolis. This declining interest raises concerns about the potential consequences for students' academic performance, the workforce's future, and the overall development of scientific knowledge within the state. Despite the significant role Chemistry plays in fostering scientific literacy, critical thinking, and problem-solving skills, a considerable number of students appear to lack enthusiasm and engagement when it comes to this subject. The lack of interest in Chemistry could hinder students' holistic development, restrict career options in science-related fields, and ultimately impede Edo State's progress towards scientific advancements and innovations.

Understanding the factors influencing students' declining interest in studying Chemistry is crucial for devising effective interventions to rekindle their passion for the subject. Identifying these factors can offer valuable insights into the challenges faced by educators and policymakers in nurturing students' curiosity and motivation to explore Chemistry's diverse and practical applications. Thus, this research seeks to explore and

analyze the underlying factors contributing to the waning interest in Chemistry among students in Edo State Metropolis. By investigating these factors comprehensively, we aim to uncover potential solutions and recommendations that can be implemented to create a more conducive and inspiring learning environment for Chemistry education.

Research Questions

In order to examine the problem of the study, the following research questions were postulated:

1. Do teaching methodologies influence students' interest in studying chemistry in senior secondary schools?
2. Does the use of laboratory coat during chemical laboratory activities influence the interest of students in studying chemistry in secondary schools?
3. Do peer interaction influence senior secondary school students' interest in studying chemistry?
4. Do parental pressure influence senior secondary school students' interest in studying chemistry?

5. Does the desire to study science/medical course in tertiary institution influence students' interest in studying chemistry?

Hypothesis

All research questions were hypothesized.

1. Teaching methodologies do not significantly influence students' interest in studying chemistry in senior secondary school.
2. The use of laboratory coat during chemical laboratory activities does not significantly influence students' interest in studying chemistry in secondary school.
3. Peer interaction do not significantly influence students' interest in studying chemistry in senior secondary school.
4. Parental pressure does not significantly influence students' interest in studying chemistry in senior secondary school .

5. The desire to study science/medical course in tertiary institution does not significantly influence students' interest in studying chemistry in senior secondary school.

Purpose Of The Study

The study aims at achieving the following objectives:

1. Identify Contributing Factors
2. Inform Educational Policy and Practice
3. Improve Teaching Methodologies
4. Investigate Teacher's influence
5. Identify Peer pressure
6. Encourage scientific pursuits
7. Investigate parental pressure

Significance Of Study

However, this research will be significant in the following ways:

1. The study's findings can lead to targeted interventions and improvements in Chemistry education, enhancing students' interest and engagement in the subject.
2. By empowering students and considering their perspectives, the research can inspire science-related career choices and contribute to Edo State's socioeconomic development.
3. The study's insights can inform educational policy, curriculum development, and teaching methodologies, fostering a more stimulating and inclusive learning environment.
4. Additionally, the research can add to the existing knowledge on factors influencing student interest in science education, inspiring further academic investigations in related fields.

Scope and Delimitation Of Study

Scope Of Study:

The study aims to investigate a range of factors that influence students' interest in studying Chemistry. These factors may include teaching methodologies, curriculum relevance, availability of resources, parental attitudes, peer interactions, and the perception of Chemistry's practical applications in students' lives and future career aspirations.

Delimitation of Study:

While the study aims to provide valuable insights into the factors affecting students' interest in studying Chemistry, it acknowledges certain delimitations that define its boundaries:

1. **Geographical Limitation:** The research is confined to the specific geographical area of Edo State Metropolis, and its findings may not be fully representative of the entire state or other regions with distinct sociocultural contexts.

2. **Time Constraints:** The study will be conducted within a specific timeframe, and long-term changes or trends in students' interest in Chemistry may not be fully captured.
3. **Sample Size:** Due to practical limitations, the study may include a specific sample size of schools and students, which may not fully encompass the entire population of secondary school students in Edo State Metropolis.
4. **Language Limitation:** The research will be conducted in a specific language, and language barriers may restrict access to certain participants or resources conducted in other languages.
5. **External Factors:** While efforts will be made to identify various factors influencing student interest, the study may not fully account for all external variables that can impact students' interest in Chemistry.

Despite these delimitations, the study aims to provide valuable insights into the factors influencing students' interest in studying Chemistry within the defined scope, offering a foundation for future research and informing targeted improvements in Chemistry education in Edo State Metropolis.

Operational Definition of Terms

1. **Interest in Studying Chemistry:** For the purpose of this study, "interest in studying Chemistry" refers to the level of enthusiasm, curiosity, and engagement that secondary school students demonstrate towards the subject of Chemistry as part of their academic curriculum.
2. **Factors Affecting Interest:** "Factors affecting interest" encompass various elements that may positively or negatively influence students' engagement with Chemistry. These factors include teaching methodologies, curriculum relevance, availability of resources, parental attitudes, peer interactions, and students' perception of the subject's practical applications in their lives and future career prospects.
3. **Teaching Methodologies:** "Teaching methodologies" refers to the specific approaches, strategies, and techniques used by educators to deliver Chemistry lessons and engage students in the learning process. This may include interactive teaching, hands-on experiments, multimedia tools, and other instructional practices.

4. **Curriculum Relevance:** “Curriculum relevance” pertains to the perceived applicability and significance of Chemistry topics and concepts in the students’ daily lives, future career aspirations, and the real-world context.
5. **Availability of Resources:** “Availability of resources” relates to the access and availability of laboratory facilities, textbooks, educational materials, and other learning resources required for effective Chemistry education.
6. **Parental Attitudes:** “Parental attitudes” refers to the opinions, beliefs, and support exhibited by parents or guardians towards their children’s education, particularly in the context of studying Chemistry.

7. **Peer Interactions:** “Peer interactions” encompass the influence of students’ friends and classmates on their interest in studying Chemistry. This includes discussions, peer group norms, and shared attitudes towards the subject.
8. **Perception of Practical Applications:** “Perception of practical applications” refers to students’ beliefs and understanding of how Chemistry concepts and knowledge can be applied in real-life situations and future career pathways.

CHAPTER TWO

Review of Related Literature

This chapter dealt with a review of the literature on various studies on factors that affects student interest in learning chemistry. For a deeper understanding, the review was carried under the following sub-headings:

- Theoretical Framework
- Teaching Methods
- Curriculum Content
- Students regularity to class
- Peer group interaction
- Teacher-Student Relationship
- Use of technology

Theoretical Framework

These theories are anchor on the following:

1. Attribution theory by Bernard Weirner (1974)

2.Theory of constructivism by Jean Piaget (1955)

3. Attribution theory by Bernard Weirner (1974)

Attribution theory is concerned with how individuals interpret events and how this relates to their thinking and behavior. Weirner developed a theoretical framework that has become a major research paradigm of social psychology. Attribution theory assumes that people try to determine why people do what they do either attribute causes to behavior. A person seeking to understand why another person did something may attribute one or more causes to that behavior.

A three-stage process underlines an attribution

1. The person must perceive or observe the behavior.
2. Then the person must believe that the behavior was intentionally performed.
3. The person must believe the other person was forced to perform the behavior (in which case the causes is attributed to the situation) or not (in which case the cause is attributed to the other person). Weiner focused his attribution theory on achievement. He identified ability, effort, task difficult and hick as the most important factors affecting attributions for achievement. (Weiner, 1974)

Attributions are classified along three causal dimensions:

a) Locus of control

b) Stability

c) Controllability

- The locus of control dimension has two poles: internal versus external

Locus of control.

- The stability dimension captures whether causes change over time or not. For instance ability can be classified as a stable and internal cause and effort classified as instable and internal.
- Controllability: contrasts causes one can control, such as skill/efficacy, from causes one cannot control such as aptitude, mood, others, actions and luck. The attribution theory is closely associated with the concept of motivation. (Weiner, 1974)

The Relevance of Bernard Weiner Theory of Attribution

Theory to this Study attribution theory has been used to explain the difference in motivation between fast and slow learners. According to attribution theory fast learners

will approach rather than avoid tasks related to succeeding because they believe success is due to high ability and effort which they are confident of. Failure is thought to be caused bad luck or poor exams i.e. not their fault. Thus failure does affect their self-esteem but success builds pride and confidence. On the other hand, slow learner achiever avoid success-related chores because they tend to (A) doubt their ability (B) assume success is related to luck or to "who you know" or to their factors beyond their control. This even when successful, it is not as rewarding for low achievers because he/she does not Feel responsible, i.e if does not increase his/her pride and confidence. Weiner hold the Following belief regarding hearing and educations. (Burgen, 2004)

1. There is significant relationship between attitude and achievement.
2. That people behavior is attributed to internal and external causes that influence people's behavior (Wikipedia 2011). Maintain that our view of the world, our previous experiences with a particular person or situation and our knowledge of the behavior play an important role in our attempt to explain the world and to determine the cause.

3. The students with higher rating of themselves and with higher school achievement tend to attribute success to internal, stable, uncontrollable factors such as ability, while they attribute failure to either internal, uncontrollable factors such as efforts or external uncontrollable factors such as task difficulty. (Downey, 2008)
4. Weiner emphasized the fact that students disposition or attitude (internal factors) can cause poor academic achievement in chemistry.

2. Theory of constructivism by Jean Piaget (1955).

The theory of constructivism which was propounded by Jean Piaget states that people construct their own understanding and knowledge of different things through experiencing things and reflecting on those experience; constructivism learning theory by Jean Piaget generally explain that; when a person or learner encounters with something new, first they have to reconcile it with their previous ideas and experiences, may be to change what they believed or may be to the new information as irrelevant. In his words,

people are the active creators of their own knowledge. piaget elaborates about nine(9) principles that guide constructivism learning theory such as, learning is an active process whereby learners use sensory input and construct meaning out of it, the crucial action of constructing meaning is metal (cognitive) hence, it happens in the mind and people learn to learn as they learn. Other principles includes; learning is a social activity so learning is intimately associated with learners interactions with human beings and environment around him. Learning uses language hence the language used influence learning is contextual people learn in relation to what is known believed and observable. The other principles of constructivism are: it takes time to learn because learning is not instantaneous, one needs knowledge learning and motivation as a key component Piaget (1950), suggested that knowledge is internalized through accommodation and ideas from their experience. Constructivism views learning as a process in which students activity construct new and concepts based upon prior knowledge and new information. And all these processes elaborated by the theory are required for effective teaching and learning of science require practical experiments, observation and retention so the learning theory

of constructivism comply with the teaching and learning of science and the achievement either good or poor achievement is determined by the whole process of teaching.

Teaching Method

Student interest is a crucial factor in the field of education, as it directly impacts a student's motivation to learn and their overall academic performance. In the realm of chemistry education, kindling and sustaining student interest can be a formidable challenge. However, certain teaching methods have shown promise in not only imparting knowledge but also igniting the flames of curiosity and engagement. This write-up delves into two such methods: inquiry-based learning and active learning strategies, and their profound impact on student interest in the captivating world of chemistry. (Piaget, 1955)

1: Inquiry-Based Learning

Definition and Principles:

Inquiry-based learning is a pedagogical approach that centers on students actively exploring and questioning the world around them. It encourages learners to take on the

roles of investigators and problem solvers, emphasizing critical thinking, curiosity, and self-directed learning. This method is guided by several core principles:

- Active Engagement: Students are actively involved in the learning process, posing questions, investigating, and drawing conclusions.
- Exploration: The emphasis is placed on exploration, where students formulate hypotheses, gather data, and develop conclusions.
- Real-world Relevance: Inquiry-based learning connects classroom content to real-world problems and applications.
- Ownership of Learning: Learners take ownership of their learning journey, fostering a sense of autonomy. Azman (2003).

1.1 Advantages of Inquiry-Based Learning:

Inquiry-based learning offers a multitude of advantages that extend beyond traditional didactic approaches:

- Fostering Critical Thinking: This method nurtures critical thinking skills, enabling students to analyze and evaluate information.

- Igniting Curiosity: By encouraging questions and exploration, inquiry-based learning ignites curiosity and a thirst for knowledge.
- Problem-Solving Proficiency: Learners develop robust problem-solving abilities as they tackle complex, real-world challenges.
- Long-term Retention: Concepts learned through inquiry tend to be retained longer, as they are understood deeply rather than memorized. (Bhagwan, 2005)

Application in Chemistry Education:

In the realm of chemistry education, inquiry-based learning can be a powerful tool for sparking and maintaining student interest. It provides a dynamic platform for exploring chemical concepts and phenomena. Here are a few examples of how this method can be effectively applied:

- Exploring Chemical Reactions: Students can investigate chemical reactions by formulating hypotheses, conducting experiments, and analyzing results. (Bolaji, 2005)
- Environmental Chemistry: Inquiry-based learning allows students to explore the impact of chemistry on the environment, fostering a sense of environmental stewardship.
- Analytical Chemistry: Learners can engage in hands-on analytical chemistry experiments, developing practical skills and a deep understanding of analytical techniques.

Research Findings:

Numerous research studies and case examples underscore the positive impact of inquiry-based learning on student interest in chemistry. For instance, a study conducted by Juntunen and Aksela (2013) demonstrated that students engaged in inquiry-based chemistry courses reported a significantly higher level of interest and enthusiasm for the subject compared to those in traditional lecture-based classes. These findings highlight

the potential of inquiry-based learning to transform the chemistry classroom into a hub of exploration and discovery.

2: Active Learning Strategies

Definition and Types:

Active learning strategies encompass a diverse range of teaching methods that actively engage students in the learning process. These methods shift from a passive, lecture-based approach to one where students are active participants. Several types of active learning strategies exist, including but not limited to:

- Group Discussions: Students collaborate in small groups to discuss and analyze course material. (Ihebuzor, 2000)
- Hands-on Experiments: Learners engage in practical experiments, fostering a deeper understanding of chemical concepts.
- Peer Teaching: Students take turns teaching and explaining concepts to their peers, reinforcing their own understanding.

- Problem-Based Learning: Challenges and real-world problems are presented to students, who must work together to find solutions.

Benefits of Active Learning:

Active learning strategies have been found to offer a multitude of benefits in the context of chemistry education:

- Enhanced Engagement: Active learning keeps students engaged and attentive throughout the class, reducing distractions.
- Improved Comprehension: Learners gain a deeper understanding of chemistry concepts by actively applying them.
- Collaborative Skills: Group-based strategies promote teamwork and communication skills. (Kahl, 2005)
- Application of Knowledge: Active learning encourages the practical application of chemistry knowledge, making it more relevant to real-life situations. (Koch, 2005)

Application in Chemistry Education:

Active learning strategies can be seamlessly integrated into chemistry education, making complex topics more accessible and engaging. Here are some ways in which these strategies can be applied effectively:

- Hands-on Experiments: Practical chemistry experiments not only demonstrate theoretical concepts but also allow students to actively participate in the scientific process.
- Group Problem-Solving: Assigning chemistry problems that require group collaboration encourages students to apply their knowledge collectively.
- Peer Teaching: Giving students the opportunity to teach a chemistry concept to their peers reinforces their understanding and builds confidence.
- Interactive Technology: Incorporating interactive simulations and technology into chemistry lessons provides a dynamic learning experience. (Memon, 2010)
- Research Findings: Research studies have consistently shown the positive impact of active learning strategies on student interest in chemistry. For example, a study

conducted by Vygotsky (1978) found that students who participated in group discussions and hands-on experiments in chemistry classes reported a significantly higher level of interest and enthusiasm for the subject compared to those in traditional lecture-based courses. These findings underscore the effectiveness of active learning in transforming the chemistry classroom into a dynamic and engaging environment.

Challenges and Considerations

While inquiry-based learning and active learning strategies have proven to be effective in enhancing student interest in chemistry, it's essential to acknowledge potential challenges and considerations when implementing these teaching methods. (Nija, 2019)

- Resource Constraints: Not all educational institutions may have the necessary resources, such as laboratory equipment or technology, to fully support inquiry-based or active learning approaches. Educators may need to adapt these methods to fit the available resources.

- Resistance to Change: Some educators and students may be resistant to change from traditional lecture-based approaches. Overcoming this resistance may require additional training and a supportive environment.
- Assessment Challenges: Assessing student performance and learning outcomes in inquiry-based or active learning settings can be more complex than traditional testing methods. Educators may need to develop innovative assessment tools.
- Time Constraints: Implementing these methods can require more class time compared to traditional lectures. Finding a balance between content coverage and active learning activities is essential.

Best Practices

To successfully incorporate inquiry-based learning and active learning strategies into chemistry education, educators can follow these best practices:

- Professional Development: Provide educators with training and professional development opportunities to learn how to effectively use these methods.

- Clear Learning Objectives: Clearly define learning objectives for each lesson or activity to ensure that active learning aligns with the curriculum. (Weiner, 1974)
- Varied Activities: Use a mix of active learning strategies to cater to different learning styles and objectives.
- Assessment Alignment: Align assessment methods with active learning activities to measure student performance accurately.
- Feedback and Reflection: Encourage regular feedback from students and educators to refine the implementation of these methods.

Curriculum Content

The curriculum content plays a significant role in shaping student interest and engagement in learning chemistry. Here's an exploration of how curriculum content can impact these aspects:

1. Relevance to Real-Life Applications: Curriculum content that demonstrates the real-world applications of chemistry concepts can significantly boost student

interest. When students see how chemistry relates to everyday life, they are more likely to engage with the subject matter.

Example: Showing how chemistry is involved in pharmaceuticals, environmental issues, or cooking can make the subject more relatable and intriguing. (Burstein, 2011)

2. Interdisciplinary Connections: A curriculum that integrates chemistry with other subjects like biology, physics, or environmental science can spark interest by showing the interconnectedness of different fields.

   Example: Exploring the chemistry of ecosystems or the physics of chemical reactions can captivate students with diverse scientific interests.

3. Hands-On Experiments and Practical Applications: Curriculum content that includes hands-on experiments and opportunities for students to apply their knowledge can foster engagement. Practical experiences make abstract concepts tangible and memorable.

Example: Involving students in chemical experiments where they can observe reactions firsthand can be both educational and captivating. (Gboyega, 2011)

4. Diversity of Topics and Elective Courses: Offering a diverse range of chemistry topics and elective courses allows students to explore areas that genuinely interest them. This choice empowers students to take ownership of their learning.

   Example: Providing electives in organic chemistry, biochemistry, or materials science can cater to a broad spectrum of interests within the discipline. (Kahl, 2006)

5. Relevance to Career Aspirations: Curriculum content that aligns with students' career aspirations can enhance engagement. When students see the connection between chemistry and their desired careers, they are more likely to be motivated.

   Example: Offering specialized chemistry tracks for students interested in fields like medicine, environmental science, or materials engineering can align content with career goals.

6. Inclusion of Contemporary Issues: Addressing current and relevant issues in the curriculum, such as climate change, pollution, or health crises, can stimulate interest by showcasing the immediate importance of chemistry. (Behaka, 2012)

   Example: Discussing the role of chemistry in addressing climate change and developing sustainable technologies can resonate with socially conscious students.

7. Adaptation to Learning Styles: Tailoring curriculum content to accommodate different learning styles and preferences can increase engagement. Some students may thrive with visual aids, while others may prefer more interactive approaches.

   Example: Incorporating multimedia resources, simulations, or group projects can cater to a variety of learning styles.

8. Encouraging Critical Thinking and Problem Solving: Curriculum content that challenges students with complex problems and encourages critical thinking can boost engagement. Students appreciate opportunities to tackle intellectual challenges.

Example: Presenting students with intriguing chemical mysteries or open-ended research projects can foster curiosity and engagement.

Students Regularity to Class

A student's regularity in attending chemistry classes can have a significant impact on their interest in studying the subject. Here's how regular attendance can influence interest in chemistry:

i. Understanding the Flow of Concepts: Regular attendance allows students to follow the logical progression of chemistry concepts. Missing classes can disrupt the continuity of learning and make it challenging to grasp more advanced topics. Allenia (2002)

ii. Active Engagement: Attending class consistently encourages active participation. Engaged students are more likely to ask questions, seek clarification, and engage in discussions, which can deepen their interest.

iii. Access to Resources: In-class resources such as demonstrations, experiments, and hands-on activities are integral to chemistry education. Regular attendees have

consistent access to these resources, enhancing their understanding and curiosity. Ghiraji, (2005)

iv. Interaction with Peers: Classroom interactions with peers can foster a sense of community and collaboration. Students who attend regularly may form study groups, exchange ideas, and collectively explore chemistry topics.

v. Feedback from Educators: Consistent attendance enables students to receive timely feedback from educators. Feedback can motivate students to improve and maintain their interest in chemistry.

vi. Building a Strong Foundation: Chemistry is often a cumulative subject, with concepts building upon each other. Regular attendance ensures that students build a strong foundational knowledge, making advanced topics more accessible and interesting.

vii. Instructor's Enthusiasm: An enthusiastic instructor can significantly influence student interest. Regular attendees have more opportunities to experience an instructor's passion for the subject, which can be contagious.

viii. Accountability: Consistent class attendance creates a sense of responsibility and accountability. Knowing that they are expected to be present can motivate students to stay engaged and interested.

ix. Alignment with Assessment: Chemistry courses typically include quizzes, tests, and assignments that assess students' understanding. Regular attendees are better prepared for assessments, which can boost their confidence and interest. Nehena, (2004)

x. Routine and Habit Formation: Regular attendance establishes a routine and habit of engaging with the subject. Over time, this routine can lead to a positive association with studying chemistry.

In contrast, irregular attendance or frequent absences can have the opposite effect:

a. Knowledge Gaps: Frequent absences can lead to significant knowledge gaps, making it difficult for students to understand subsequent topics, which can diminish interest.

b. Frustration and Stress: Catching up on missed content can be stressful and frustrating, potentially leading to a negative perception of chemistry.
c. Isolation: Irregular attendees may feel isolated from the class community, missing out on valuable interactions and collaborative opportunities.
d. Decline in Confidence: Students who miss classes may experience a decline in confidence, which can further erode their interest in the subject.
e. Incomplete Learning Experience: Students who miss key demonstrations or experiments may miss out on essential aspects of the subject, impacting their overall understanding and engagement. Gira, (2007)

Peer group interaction

Peer group interaction can have a profound impact on a student's interest in learning chemistry. Here's how peer group interaction can influence interest in the subject:

1. Collaboration and Discussion: Peer group interaction fosters collaborative learning. When students discuss chemistry concepts and problem-solving strategies with their peers, it can lead to a deeper understanding of the subject.
2. Peer Support and Encouragement: Positive peer interactions can provide emotional support and encouragement. Students who receive support from their peers are more likely to feel confident and motivated to study chemistry.
3. Diverse Perspectives: Interacting with peers from diverse backgrounds and experiences can introduce new perspectives and ideas. This diversity can make chemistry more interesting and relevant to a broader range of students.
4. Peer Teaching: Teaching a concept to a peer is a powerful learning method. When students explain chemistry concepts to each other, they reinforce their own understanding, which can increase their interest in the subject. Higa (2008)
5. Group Projects and Activities: Collaborative group projects and activities in chemistry classes can make learning more engaging. Students working together to solve problems or conduct experiments often find the subject matter more interesting.

6. Healthy Competition: Friendly competition among peers can spur interest. Students may become more motivated to excel in chemistry when they see their peers achieving success in the subject.
7. Social Learning: Humans are inherently social beings, and social interactions are a natural way of learning. Interacting with peers in chemistry classes taps into this natural instinct and can make the subject more enjoyable.
8. Reducing Isolation: Chemistry can be a challenging subject, and students may feel isolated if they struggle with it. Peer interactions can reduce this sense of isolation by providing a support network.
9. Sharing Resources and Study Strategies: Students often share helpful study resources and strategies with their peers. Learning from each other's study techniques and tips can improve overall interest and performance in chemistry.
10. Creating a Sense of Belonging: - A positive peer group can create a sense of belonging. When students feel like they are part of a supportive community of learners, they are more likely to maintain interest in chemistry.

On the other hand, negative peer interactions, such as competition taken to an unhealthy extreme or an unsupportive social environment, can have a detrimental effect on a student's interest in learning chemistry. Therefore, fostering a positive peer group environment is essential for enhancing interest in the subject.

In summary, peer group interaction can significantly influence a student's interest in learning chemistry by promoting collaboration, support, diverse perspectives, and a sense of belonging. It can transform the subject from an individual endeavor into a social and engaging learning experience. Daminiji, (2009)

Teacher-Student Relationship

The student-teacher relationship has a substantial impact on a student's interest in learning chemistry. Here are some ways in which this relationship can influence interest in the subject:

1. Positive Mentorship: A strong student-teacher relationship can serve as a mentorship, where the teacher inspires and guides the student's interest in

chemistry. Teachers who take an active interest in their students' progress can inspire curiosity and enthusiasm for the subject.

2. Effective Communication: Open and effective communication between teachers and students can create an environment where students feel comfortable asking questions and seeking clarification. When students know they can approach their teacher, they are more likely to engage with the subject matter.
3. Personalized Support: Teachers who understand their students' individual learning needs can tailor their teaching approaches to accommodate those needs. This personalized support can make chemistry more accessible and engaging for students.
4. Feedback and Encouragement: Constructive feedback and encouragement from teachers can boost a student's confidence and motivation to learn chemistry. When students feel that their efforts are acknowledged and appreciated, they are more likely to develop a positive interest in the subject.
5. Inspiration and Role Modeling: Teachers who are passionate about chemistry can serve as role models for their students. When students witness their teacher's

enthusiasm and dedication to the subject, it can inspire them to develop a similar interest.

6. Creating a Supportive Environment: A positive student-teacher relationship contributes to a supportive classroom environment. Students are more likely to engage with chemistry when they feel safe, respected, and valued by their teacher.
7. Reducing Anxiety: Chemistry can be a challenging subject, and students may experience anxiety. A supportive teacher-student relationship can help alleviate this anxiety by providing emotional support and reassurance.
8. Motivating Experiences: Teachers who incorporate engaging demonstrations, hands-on experiments, and real-life applications into their lessons can spark student interest. When students have memorable and motivating experiences in the classroom, they are more likely to want to learn more about chemistry.
9. Individualized Guidance: Teachers can provide guidance on potential career paths in chemistry, further education, and opportunities for exploration. This guidance can help students see the practical and exciting aspects of the subject, enhancing their interest.

10. Trust and Respect: Building trust and mutual respect between teachers and students is fundamental. When students feel that their teacher respects their opinions and values their contributions, they are more likely to engage actively in the learning process.

In contrast, negative student-teacher relationships marked by communication barriers, lack of support, or a hostile classroom atmosphere can diminish a student's interest in chemistry. Therefore, fostering a positive and supportive student-teacher relationship is essential for creating an environment where students can develop a genuine interest in learning chemistry.

Use of Technology

The use of technology in learning chemistry can have a substantial impact on student interest. Here's how technology can influence interest in the subject:

a) Visualization of Abstract Concepts: Technology, such as interactive simulations and 3D modeling software, can help students visualize abstract and complex

chemical concepts. Visual aids make the subject more engaging and understandable.

b) Interactive Learning Experiences: Online platforms and apps offer interactive chemistry lessons, quizzes, and virtual labs. These tools allow students to actively engage with chemistry concepts, fostering interest through hands-on experiences.

c) Immediate Feedback: Technology enables immediate feedback on assignments and assessments. Students receive instant information about their performance, which can motivate them to improve and maintain their interest.

d) Customized Learning Paths: Adaptive learning technologies can assess students' strengths and weaknesses, tailoring the learning experience to their individual needs. This personalized approach keeps students engaged and challenged at an appropriate level. Hinnenu, (2014)

e) Access to a Wealth of Resources: The internet provides access to a vast array of resources, including video lectures, articles, and educational websites. Students can explore diverse perspectives and find resources that align with their interests in chemistry.

f) Virtual Labs and Experiments: Virtual labs allow students to conduct experiments online, even if physical lab access is limited. This hands-on experience can deepen their understanding and interest in chemistry.

g) Real-World Applications: Technology can showcase the real-world applications of chemistry. Students can learn how chemistry impacts industries like medicine, energy, and environmental science through multimedia presentations and case studies. Gabriels, (2016)

h) Engaging Multimedia: Technology enables the use of engaging multimedia content, such as videos, animations, and interactive presentations. These multimedia elements make learning chemistry more dynamic and captivating.

i) Collaborative Learning: Online collaboration tools and platforms facilitate group discussions and peer interactions, even when students are not physically present. Collaboration can foster a sense of community and shared interest in chemistry.

j) Access to Current Research: Technology allows students to access current research articles and publications in the field of chemistry. Exposure to cutting-edge discoveries can inspire curiosity and interest in the subject.

k) Flexibility and Convenience: Online learning platforms provide flexibility and convenience, allowing students to access chemistry content at their own pace and convenience. This flexibility can enhance interest by accommodating different learning styles and schedules.

While technology can have a positive impact on student interest in learning chemistry, it's essential to use technology effectively and thoughtfully. The integration of technology should align with pedagogical goals and be accompanied by proper training and support for both students and educators to maximize its benefits. (Weiner, 1974)

Summary of literature review

Teacher's teaching style is a key factor that may influence the students attitudes towards learning age. chemistry. The use of a variety of teaching styles and methods can raise the attention and interest in chemistry. Chemistry lesson that are not interesting will not inspire the students to listen, participate and learn in class. This in turn will affect their academic performance. Chemistry is not an easy subject to grasp. Due to that, students have to pay attention to the lesson, specifically the teacher teaching in front, in

order to understand what is being taught. It is up to the teacher to make the lesson a fun learning experience to capture student's interested in learning chemistry, teachers who fail to use an interesting teaching style during chemistry class, will lose the student's attention and they can easily get bored. According to Grasha (2002), there are five types of teaching styles. The teaching styles are expert teaching style, formal authority teaching style, personal model teaching style, facilitator teaching style and delegator teaching style. Nevertheless, the choice of teaching styles and methods should be in line with the curriculum content. Besides that, teachers have to take into considerations on the students ability, student level of intelligence, and the availability of resources and infrastructure (Curriculum development Centre, 2002). Some teachers find this an environmental challenge because it is quite difficult to cater for each and every student needs schools should at least have the basic infrastructure for teaching and learning of chemistry which are classroom, laboratory and library. Classrooms must be in good conditions and comfortable for the students to absorb knowledge because a good classroom also influence student moods schools should also provide enough chemistry equipment to ensure students can carry out many experiments with their teachers. A library can help

students find extra references for their chemistry homework and readings. When teachers put more effort in their teaching style as well as put into concern the student needs it can boost the students attitude towards chemistry.

The formation of student positive attitude towards chemistry would require a lot of time and careful planning (Azman, 2003; Menis, 1983). Positive attitude towards learning chemistry cannot be formed over a short period of time. Therefore, the society at large, namely the education boards, teachers and parents, have to link hands and ideas to overcome this environmental challenges of negative attitude toward learning chemistry. This is to ensure future communities that are balanced in scientific knowledge as well as technology, social, humanities and other subjects in this world for a better future ahead.

CHAPTER THREE

METHODOLOGY

The purpose of this chapter is to present the procedure employed in gathering data on the factors affecting students interest in studying chemistry, a case study of University of Benin, Benin City. This chapter therefore describes the method used for the study. The various methods used are discussed under the following headings:

- Research Design
- Population of the Study
- Sample and Sampling Technique

- Research Instrument
- Validity of the Instrument
- Method of Data Collection
- Method of Data Analysis

Research Design

A survey research design was used in this study to investigate factors affecting students interest in studying chemistry in Egor Local Government Area, Benin City, Edo State. The choice of this design was considered appropriate because of its advantages in identifying attributes of a large population from a group of individuals.

Population of the Study

The population of the study consisted of some of Chemistry students in some senior secondary schools in Egor Local Government Area of Edo State.

Sample and Sampling Technique

The sample for this study is 100 Chemistry students in public and private schools Senior Secondary schools in Egor Local Government Area of Edo State. There are 16 public Secondary Schools and 149 Private Secondary Schools in Egor Local Government Area. The simple random sampling technique will be used to select 60 Chemistry students from both public and private secondary Schools in the Local Government Area.

Research Instrument

The research instrument titled ‘ investigating factors affecting students interest in studying chemistry Questionnaire’ (IFASISQ) was used to gather data for the study. Section ‘A’ of the research questionnaire describes respondents’ background information, categories include: gender, class,. Section ‘B’, on the other hand describes the students interest. The questionnaire was made up 2 items in section ‘A’ and 20 items in section B. The use of Agree, Strongly agree, Disagree and strongly disagree was used to get answers from the respondents.

Validity of Instrument

The instrument was be subjected to face validity by the researcher's Supervisor and two other experts in the Department of Curriculum and Instructional Technology (CIT), Faculty of Education, University of Benin. Their and suggestions will be used to produce the final draft of the instrument.

Reliability of Instrument

In order to determine the reliability of the instrument used in the study, the corrected questionnaire was administered randomly to 20 selected student who were part of the population but not part of the sample and a coefficient 0.808 was obtained using Cronbachs Alpha.

Method of Data Collection

The instrument was personally administered by the researcher to the respondents. The researcher introduced herself to the respondents, explained what the research is all about

as well as the aid of two trained researcher assistants who was briefed on what to do. The questionnaire were personally administered by the researcher to the Respondents during school hours. The exercise was done with the help of head of operations of the organization.

Method of Data Analysis

The data collected was analyzed using mean, standard deviation and independent t-tests. A mean score rating method was used to analyze the data based on the 2.5 acceptance region format to answer the research questions.

CHAPTER FOUR

PRESENTATION OF RESULTS AND DISCUSSION OF FINDINGS

In this chapter, results obtained after data analysis are presented and findings are discussed.

Presentation of Results

HYPOTHESIS 1: Teaching methodologies does not significantly influence students interest in studying chemistry in senior secondary school.

TABLE 1: One sample t-test of the influence of teachers methodology on the choice of chemistry as a course.

	N	Mean	SD	T	Test value	df	Sg(2 table)
Score	400	3.1475	.82913	15.619	2.5	399	.000

From table 1, mean score of 3.15 which is higher than the test value of 2.5 was obtained alongside with .829 standard deviation. Also, p-value of .000 which is less than the 0.05 $\propto$-level was obtained. It therefore means that teachers' methodology significantly influences the choice of chemistry was a course of study. Hence, the null hypothesis is not retained.

HYPOTHESIS 2: The use of laboratory coat during chemical laboratory activity does not significantly influence students' interest in studying chemistry in secondary schools.

TABLE 2: One sample t-test of the influence of the chemistry laboratory coat in the choice of chemistry as a choice.

	N	Mean	SD	T	Test value	Df	Sg(2 table)
Score	400	2.9550	.85721	10.616	2.5	399	.000

From table 2, mean score of 2.96 which is higher than the test value of 2.5 was obtained alongside with .86 standard deviation. Also, p-value of .000 which is less than the 0.05 $\propto$-level was obtained. It therefore means that chemistry laboratory coat significantly influences the choice of chemistry as a course of study by chemistry students. Hence, the null hypothesis is not retained.

HYPOTHESIS 3: Peer interactions do not significantly influence students' interest in studying chemistry.

TABLE 3: One sample t-test of the influence of peer interactions on the choice of chemistry as a course of study.

	N	Mean	SD	T	Test value	df	Sg(2 table)
Score	400	2.5825	.97497	1.692	2.5	399	.091

From table 3, mean score of 2.58 which is higher than the test value of 2.5 was obtained alongside with .975 standard deviation. Also, p-value of .091 which is higher than the 0.05 $\propto$-level was obtained. It therefore means that peer does not significantly influence the choice of chemistry as a course of study. Hence, the null hypothesis is retained.

HYPOTHESIS 4: Parental pressure does not significantly influence students' interest in studying chemistry in senior secondary schools.

TABLE 4: One sample t-test of parental influence on the choice of chemistry as a course of study.

	N	Mean	SD	T	Test value	Df	Sg(2 table)
Score	400	2.6900	.96500	3.938	2.5	399	.000

From table 4, mean score of 2.69 which is higher than the test value of 2.5 was obtained alongside with .965 standard deviation. Also, p-value of .000 which is higher than the 0.05 $\propto$-level was obtained. It therefore means that parents significantly influence the

choice of chemistry as a choice of study by chemistry students of the university of Benin. Hence, the null hypothesis is not retained.

HYPOTHESIS 5: The desire to study science/medical course in tertiary institution does not significantly influence students' interest in chemistry.

TABLE 5: One sample t-test of the influence of intended course of study on the choice of chemistry as a course.

	N	Mean	SD	T	Test value	df	Sg(2 table)
Score	400	3.1025	.97435	12.367	2.5	399	.000

From table 5, mean score of 3.10 which is higher than the test value of 2.5 was obtained alongside with .974 standard deviation. Also, p-value of .000 which is higher than the 0.05 $\propto$-level was obtained. It therefore means that the intended course of study of students' significantly influence the choice of chemistry as a course of study by University of Benin chemistry students. Hence, the null hypothesis is not retained.

Discussion of Findings

The findings are discussed as follows:

In Table 1, the mean score of 3.15, standard deviation of 0.829, and a p-value of 0.000 indicate that teachers' methodology significantly influences the choice of chemistry as a course of study. In Table 2, the mean score of 2.96, standard deviation of 0.86, and a p-value of 0.000 show that the presence of chemistry laboratory coats significantly influences students' choice to study chemistry. In Table 3 reveals that the mean score of 2.58, standard deviation of 0.975, and a p-value of 0.091 suggest that peer influence

doesn't significantly impact the choice of chemistry as a course of study. The null hypothesis is retained. In Table 4, the mean score of 2.69, standard deviation of 0.965, and a p-value of 0.000 indicate that parents significantly influence students' choice to study chemistry. In Table 5 displays a mean score of 3.10, a standard deviation of 0.974, and a p-value of 0.000, all pointing to the conclusion that the intended course of study significantly influences the choice of chemistry for University of Benin students.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

Summary

The purpose of this research was designed to Investigate Factors Affecting Students Interest in Studying Chemistry in Senior Secondary School in Egor Local Government Area in Edo State. 100 chemistry students from public and private schools were used as

sample size for this study. The researcher made effort in analyzing the influence of teaching methodologies on students' interest in studying chemistry in senior secondary schools, the influence of the use of laboratory coat during chemical laboratory activities on the interest of students in studying chemistry in secondary schools, the influence of peer interactions on the interest of students in studying chemistry in secondary schools, the influence of parental pressure on the interest of students in studying chemistry in secondary schools and to know if the desire to study science/medical course in tertiary institution influence students' interest in studying chemistry. All of which have been discussed in details under the review of literature.

The collection of data was carried out through the administration of questionnaire to 100 chemistry students which were drawn from all public and private secondary schools in Egor local government area of Edo state. The data were interpreted and discussed using mean, standard deviation and independent t-tests. The sampling technique used for the research is the convenient sampling technique.

Conclusion

Following the analysis of the data collected and findings were made:

1. Students are more interested in studying chemistry, when the teachers utilize effective teaching methods and materials.
2. The respect accorded to students in laboratory coats increases the zeal to study chemistry in students.
3. Peer interactions do not significantly affect students' interest in studying chemistry.
4. Parents who serve as role models greatly influence students' interest in studying chemistry.
5. Students study chemistry as a requirement for the science course they wish to study

Recommendations

Based on the conclusion of the study, the following recommendations are made;

1. Governments and school managements should provide an environment suitable for the best teaching methodologies and allocate appropriate teaching aids.
2. Government agencies should make provisions for free laboratory coats across senior secondary schools to increase students' interest in studying chemistry.
3. School administrators should make it imperative to always hire professional teachers who can effectively increase the interest of studying chemistry through adequate teaching methods and maximizing the utility of instructional materials.
4. Parents should strive to serve as positive role models for students who see them on a pedestal.
5. Government, Schools administrators and educational stakeholders should endeavor to enlighten students and lay emphasis on the need for chemistry in the science courses they wish to study in higher institutions.

Suggestions for further studies

This study investigated the Factors Affecting Students Interest in Studying Chemistry in Senior Secondary School in Egor Local Government Area in Edo State, using 100

respondents. The future researcher may repeat this study by using larger population such as more than one local government area.

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APPENDIX

UNIVERSITY OF BENIN

FACULTY OF EDUCATION

DEPARTMENT OF CURRICULUM AND INSTRUCTIONAL TECHNOLOGY

INVESTIGATING FACTORS AFFECTING STUDENTS INTEREST IN STUDYING CHEMISTRY IN SENIOR SECONDARY SCHOOL IN EGOR LOCAL GOVERNMENT AREA IN EDO STATE

Dear Respondent,

The researcher is an undergraduate of the above-named institution and is currently researching

Factors affecting students interest in studying chemistry in senior secondary schools.. This research is purely for academic purposes, as such providing genuine and honest responses by assisting to provide answers to the question below.

The information obtained will be treated as confidential.

Thank you.

Ruth EbimiebhorOmenai
[Researcher]

Please, kindly respond sincerely to the items of the questionnaire. It is mainly for academic purpose, your response will be treated with high confidentiality.

Section A: Demographic Data

Fill in the blank spaces and tick (✓) the option that is applicable to you.

Sex: Male [ ], Female [ ]

Class: SS1 [ ], SS2 [ ], SS3 [ ]

Section B: Tick (✓) the option that is applicable to you.
Key words: Strongly Agree (SA); Agree (A); Disagreed (D); Strongly Disagreed (SD).

S/N	ITEMS	SA	A	D	SD

1.	I was attracted to chemistry because of the way our teacher teaches the subject				
2.	I was interested in studying chemistry because of the laboratory activities included in the subject				
3.	My interest in chemistry aroused because of the teaching aid used in teaching the subject				
4.	My interest in chemistry aroused because of the instructional material used in teaching the subject				
5.	Each time I see students in their lab coats when I was in jss, I decided to study chemistry				
6.	I love to be in chemistry lab coat hence I'm studying chemistry				
7.	Respect accorded to students when in their lab coats prompted me to study chemistry				

8.	I became interested to study chemistry when I saw science student in the lab coats doing practical in their lab				
9.	I was motivated to study chemistry because of the way my friends discuss about it's importance				
10.	I was motivated to study chemistry because my close friends were very good at it				
11.	All my friends hard likeness for chemistry so, I decided to study it				
12.	My friends always discuss the job opportunities awaiting chemist. so, I decided to study it				
13.	I was motivated by my parents to study chemistry that was what prompted me				
14.	My parents wanted me to be a science student that was the reason I choose chemistry				

15.	My parents are scientists so they encourage me to study chemistry that is the reason I am studying it				
16.	My parents employed science teacher to teach us science subject at home that was the reason I am studying chemistry				
17.	I have study chemistry because I want to study sciences				
18.	I'm studying chemistry because it is a requirement for the course I want to study in tertiary institution				
19.	I am studying chemistry because I do not know the cause I will be admitted to study in the near future				
20.	I am just studying chemistry because it is a science subject it is not required in my future course of study				